

# **US EPA SITE SAFETY PLAN**

**Anaconda Aluminum Company Columbia Falls Smelter  
Columbia Falls, Montana**

US EPA, Region 8  
Ecosystems Protection and Remediation  
Site Assessment Team  
(EPR-AR)

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**SITE SPECIFIC SAFETY PLAN ACKNOWLEDGMENT FORM**

SITE NAME: Anaconda Aluminum Company Columbia Falls Smelter

Scheduled Equipment to Mobilize to Site: None

Proposed Sampling Activities: Oversee EPA Contractor site investigation field activities that include the collection of groundwater, surface water, sediments, and soil samples.

Site Specific Safety Plan:

Prepared by Victor Ketellapper, CERCLA Site Assessment Team Leader

_____ Signature	_____ Name	_____ Date
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Read and understood by personnel accessing the site:

_____ Signature, EPA Team Member,	_____ Name (Print)	_____ Date
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Emergency Contact Name & Number \_\_\_\_\_

_____ Signature, EPA Team Member,	_____ Name (Print)	_____ Date
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## **SITE SAFETY PLAN FIELD INVESTIGATIONS**

This Site Safety Plan is based upon information provided by the United States Environmental Protection Agency (EPA) Region 8. If new information is obtained or identified, this Site Safety Plan will be amended as applicable.

This Site Safety Plan defines and designates Health and Safety requirements and protocols to be followed at the Anaconda Aluminum Company Columbia Falls Smelter site during oversight of contractor sampling activities. Applicability extends to all EPA employees who access the site.

### **1.0 GENERAL INFORMATION**

#### **1.1 Site Background**

The Site is located approximately 2.0 miles northeast from the population center of Columbia Falls, Flathead County, Montana, on Aluminum Drive in Township 30N, Range 20W, Section 3 at Universal Transverse Mercator (UTM), coordinates 712139.73 E and 5363972.34 N. The closest residences are approximately 1 mile north, southeast, and west of the Site. According to the 2010 Census (American Fact Finder, [www.factfinder2.census.gov](http://www.factfinder2.census.gov)), the total population of Flathead County is 90,928 and the total population of Columbia Falls is 1,150. The Site covers approximately 700 acres and is bound by the Flathead River to the south, Teakettle Mountain to the east, Cedar Creek Reservoir to the north, and Cedar Creek to the west. The elevation at the Site is approximately 3,100 feet above mean sea level (amsl). Topography at the Site is generally flat with a southern slope at approximately 3° to 4° with the area north of the site slightly steeper at approximately 5° to 6° (Ecology and Environment, Inc., 1988).

The Anaconda Copper Mining Company built the Anaconda Aluminum Reduction Facility and began production in 1955. The Atlantic Richfield Company (ARCO) purchased the plant in 1978 and operated it until 1985 when it was sold to the Montana Aluminum Investor's Corporation and began operations under CFAC. In 1999, Glencore acquired the company and operated until 2009 when production was curtailed due to poor economic conditions for aluminum production.

The plant is a Vertical Stud Soderberg aluminum reduction facility that uses the Hall Heroult process of producing aluminum in carbon-lined "pots" heated to 960 degrees Celsius (°C). Aluminum oxide is dissolved in a molten cryolite bath and aluminum oxide is reduced to aluminum metal by electrons from direct current through the pot. The molten aluminum is then tapped from the pot and cast into ingots. This process uses 350 megawatts, and 600 pots at 100% production. There are currently 451 pots in place; however the facility has not operated since October 31, 2009.

The Site includes numerous buildings and industrial operating facilities such as offices, warehouses, fabrication, laboratory, washhouse, paste plant, coal tar pitch tanks, pump houses, and the main pot line facility. Features on the Site include percolation ponds, leachate ponds, sludge

ponds, sewage treatment ponds, cathode soaking pits, closed and operational landfills.

## 1.2 Site Sampling Objectives

The objective is to conduct an expanded site investigation of the Site as outlined in the Sampling and Analysis Plan (SAP) prepared by Weston Solutions for EPA. EPA personnel will be overseeing the EPA contractor conducting groundwater, surface water, sediment, and soil sampling using protocols outlined in the SAP.

## 1.3 Key Site Personnel Responsibilities

1.3 Key Site Personnel Responsibilities

(For a complete listing of personnel and associated functions please see the *Site Specific Safety Plan Acknowledgement Form* located at the beginning of this document). Note that in the event a listed individual is not able to attend a sampling event(s), a replacement will be named prior to field activities.

### Site Supervisor

The Site Assessment Manager or designated representative will serve as Site Supervisor (will be announced in the field). Responsibilities include, but are not limited to:

- Being knowledgeable of federal, state, local and company requirements applicable to the work assignments;
- Evaluating the potential hazards of projects and appropriately managing for control of these hazards;
- Establishing, through personal example, the desired safety environment for the performance of duties;
- Ensuring that all EPA employees under his supervision or control meet the eligibility requirements of the EPA Health and Safety Plan before they are allowed to enter a hazardous waste site or are assigned to a specific laboratory task that may result in workplace exposure to chemical hazards;
- Verifying that appropriate safety equipment and protective devices are provided for each job and are continuously in proper working order (this includes drinking water and other fluid replacement beverages);
- Identifying special training requirements and ensuring compliance as appropriate;
- Identifying and correcting health and safety deficiencies within her control and promptly notifying EPA management or health and safety staff of deficiencies outside their control; and
- Monitoring the condition of workers on site to assess need for work hour limitations.

### Site Safety Officer



EPA's contractor, Weston Solutions will designate a Site Safety Officer (will be announced in the field). Responsibilities include, but are not limited to:

- Conducting daily site safety meetings;
- Enforcing use of appropriate levels of protection, and procedures to minimize any hazards to EPA, other federal and state personnel, and community residents;
- Ensuring the preparation, approval, and enforcement of site-specific health and safety plans for assigned EPA tasks;
- Ensuring that all EPA employees under his direction are properly qualified to complete their work assignments;
- Providing health and safety support for assigned EPA tasks;
- Assisting in the implementation of health and safety responsibilities of EPA management staff;
- Establishing, through personal example, the desired safety environment for the performance of duties;
- Ensuring that driving conditions are acceptable for movement of all vehicles;
- In the event of boat travel, ensuring that USCG-approved life jackets are provided for all personnel;
- Continually evaluating compliance with government health and safety regulations;
- Identifying special training requirements and ensuring compliance as appropriate;
- Recommending changes to the EPA health and safety plan as needed based on newly issued or revised regulations, experience, and loss-control practices;
- Identifying and correcting health and safety deficiencies within his control and notifying EPA management or health and safety staff of deficiencies outside his control; and
- Recommending changes in the work schedule of site workers in order to avoid accidents due to fatigue and environmental stress.

## **2.0 EMERGENCY PROCEDURES/CONTINGENCY PLAN**

In the event of an emergency, Site Personnel should stop work and retreat to a designated area to determine appropriate response and establish site security and control. The designated area of retreat shall be determined by the Site Safety Officer at the site safety briefing prior to mobilization.

In the event of a medical emergency, personnel are highly discouraged from transporting personnel in private vehicles. Emergency medical services should be contacted, call 911, in all but the most minor medical conditions. In order to facilitate the provision of emergency medical services, the hospital site location information will be available in sampling vehicles for reference and guidance in the event of an emergency.

If a team member is taken to the clinic or hospital, their Medical Data Sheet should be taken for use by the treating physician. Each team member should complete his/her Medical Data Sheet, place it in a

sealed envelope with “Medical Data Form” and their name on it, and take it to the field. The form should be kept in a location known to the other team members.

The most accessible emergency hospital is North Valley Hospital (ph 406-863-3500), and is located at 1600 Hospital Way, Whitefish, Mt 59937. A map with directions from the Site to North Valley Hospital is attached to this HASP.

### **Reporting of Accidents:**

An **employee** who suffers a work injury or becomes involved in an accident, regardless of how minor, which may have resulted in an injury to himself or others, is required to report the accident and/or work injury as soon as possible to their supervisor, who will then contact the CERCLA Site Assessment Team Leader, Victor Ketellapper (720-951-0975). Even if the accident information is incomplete, **notify management as soon as possible**. After accident information is received by management, the EPA Health and Safety Officer, Bill Daniels, must be notified immediately.

In case of an accident or injury, Johanna Miller, Program Director, will contact Bill Daniels of EPA Technical Management Systems. Upon notification of an accident, Bills Daniels will contact the EPA workers compensation insurance carrier and complete the necessary forms such as an OSHA 301 form, even if the information is incomplete.

The employee must advise the attending medical personnel that their injury is work-related so the medical facility can submit the appropriate information to EPA Human Resources (HR). EPA HR will initiate the claims process with the EPA workers compensation insurance carrier and any required notifications to the appropriate state.

During nights, weekends, or holidays, contact EPA CERCLA Team Leader Victor Ketellapper (720-951-0975). If EPA Manager is unavailable, contact the EPA Health and Safety Officer Bill Daniels (303-312-6074). Either the Manager or Health and Safety Officer can contact the EPA workers compensation insurance carrier and initiate the claims process with Travelers, who will provide for the employee a claim number and the claim handler’s name. The employee will use this claim number for any related billing (hospital, medical, etc.). The claim number, claim handler’s name, and all related information should be forwarded to Bill Daniels as soon as possible.

After initial notifications and verbal reporting, the employee should complete any accident reports and related forms.

Additional information can be found in the EPA, Region 8 Health and Safety Plan, Reporting of Accidents or Incidents.

### **Emergency numbers are as follows:**

Police, Fire or Medical Aid	911
Medical Center	(406) 863-3500

Police (406) 892-3911  
Fire Station (406) 892-3234  
EPA EPR-AR Team Leader: Victor Ketellapper (720)951-0975  
EPA – Health and Safety Officer – Bill Daniels (303) 312-6074  
(EPA) National Spill Response Center (Spills>RQ) (800) 424-8802  
Rocky Mountain Poison Control Center (303) 739-1123, (800) 332-3073

### 3.0 SAFETY AND HEALTH HAZARD ANALYSIS

The following sections identify the chemical and physical hazards expected on the site associated with the sampling and analysis task.

#### 3.1 Chemical Hazards of Concern

Chemicals	Exposure Limits	Source	Routes of Exposure
Cadmium, metal and compounds	0.002 mg/m <sup>3</sup> TLV -TWA ACGIH; respirable fraction	Water/ Soils/ Sediments	Inhalation, skin contact, ingestion
Lead, metal and compounds	0.05 mg/m <sup>3</sup> TLV-TWA ACGIH	Water/ Soils/ Sediments	Inhalation, skin contact, ingestion
Cyanide	5 mg/m <sup>3</sup> TLV	Water	Inhalation, skin contact, ingestion
Nitric Acid	5.2 mg/m <sup>3</sup> TLV-TWA ACGIH	Preservative	Inhalation, skin contact, ingestion
Phosphoric Acid	1 mg/m <sup>3</sup> TLV-TWA ACGIH	Preservative	Inhalation, skin contact, ingestion
Sulfuric Acid	0.2 mg/m <sup>3</sup> TLV-TWA ACGIH (thoracic fraction)	Preservative	Inhalation, skin contact, ingestion

Personnel should always be aware of the chemical hazards and attempt to keep any exposures as low as possible. Procedures which will minimize the risk of chemical exposure to site personnel include:

- Hands should be washed frequently and always before meals.
- Disposable equipment will be used whenever possible.

- Disposable gloves will be worn during all sampling activities.

### 3.2 Physical Hazards of Concern

The main physical hazards of concern and the associated response are shown below.

Hazards of Concern	Preventative Safety Measures
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- |                                    |  |
|------------------------------------|--|
| • Someone gets lost                | • The buddy system will be used at all times;  |
| • High or fast moving water levels | • The Site Safety Officer will make a determination as to the high level and high flow conditions prior to initiating in-stream fieldwork  |
| • Cold weather operations;         | • Cold weather gear will be provided for use in the field; Team members will be aware of potential cold stress symptoms;   |
| • Slips, trips, and falls;         | • Sample team members will not travel to locations alone, and field hazards will be discussed at the daily tailgate safety meeting;  |
| • Vehicular travel;                | • Team members will be cognizant of moving vehicles  |
| • Working at elevations;           | • In the event team members experience discomfort due to high elevation location of work activities, the employee will be removed to lower elevation and work activity will cease. In the event conditions do not improve for the employee, 911 will be contacted; |
| • Heat stress & dehydration;       | • Team will take breaks as needed and drink plenty of fluids; Team members will seek shade when necessary;   |
| • Entering/exiting streams;        | • During in-stream activities waders or hip boots will be worn at all times;   |
| • Rough terrain & uneven surfaces. | • Team will be aware of the physical hazards and walk/work carefully. Team will be aware of hazards entering/leaving any boats and practice good boat safety (boat activity not planned).  |

### **3.3 Biological Hazards of Concern**

During sampling activities team members may encounter the following biological hazards:

- Insect bites and stings
- Snakes
- Wildlife

A first aid kit will be kept in each field vehicle to treat minor insect bites and scrapes. In the event more serious injuries are encountered due to biological hazards, 911 will be contacted. Sample team members will be instructed to maintain awareness of their surroundings at all times and not to approach wildlife. Team members will be aware of potential biological hazards associated with the work, and wear insect repellent as needed. If any team members have sensitivities to insect stings, etc., the team should be aware of the sensitivity and location of any personal medication brought to the field; the sensitivity or allergy should be noted on the Medical Data Form as well.

## **4.0 TRAINING**

All on-site EPA personnel will be current in meeting the OSHA training requirements as specified in 29 CFR 1910.120. The Site Supervisor and Safety Officer have also received the additional supervisor training. In addition, all personnel will:

- Review the Site Safety Plan prior to beginning field work;
- Attend the daily site-specific safety briefing prior to beginning field activities;
- Attend all other safety meetings;
- Maintain copies of all training records at site;
- Attend training in applicable work practices and procedures; and
- Attend training for Personal Protective Equipment needs and use.

## **5.0 PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Due to the nature of field activities being performed, modified Level D PPE will be required for each of the sampling events and will include the following:

- Safety glasses (sun glasses may be used as well)
- Safety boots for remote sampling locations
- Hard Hat

The following safety equipment will be provided by EPA's contractor Weston Solutions and available in field vehicles:

- First aid kit
- Mobile phone and/or 2 way radios (if available)
- Nitrile gloves
- Ice
- Towels

EPA Personnel will bring sun/safety glasses, sun screen, insect repellent, hiking boots, and cold weather gear.

## **6.0 MEDICAL MONITORING PROGRAM**

All EPA personnel involved in activities which could result in chemical exposure will be current participants in the EPA Medical Monitoring Program, which meets the requirements of 29 CFR 1910.120. Team members will be current in meeting those medical surveillance requirements and will be permitted to participate in this type of field activity according to their medical clearance.

## **7.0 AIR MONITORING PROGRAM**

Due to the nature and extent of contaminants (primarily metals contamination with limited soil sampling) associated with this sampling event (based on the results of past investigations), no air monitoring is anticipated during field sampling activities.

## **8.0 SITE CONTROL MEASURES**

### **8.1 Work Zones**

Orange cones will be used to establish a work zone around the sample vehicle when it is located roadside and being used for sample processing. Since the majority of work will be performed in or around streams, appropriate precautions will be taken to avoid flooding of equipment and exposure of personnel to high stream flows. The Site Safety Officer will determine if stream flows are dangerously high and would thus preclude in-stream activities. In addition, individual team members may elect to refrain from in-stream activities if they feel conditions are unsafe.

### **8.2 Communications and Emergency Alarm System**

Due to the small project team size and the unlikelihood of conditions developing which would require immediate evacuation, verbal communications will be used among team members. A mobile telephone and/or two-way radio will be available, and all team members shall be informed of their location at the site safety meeting prior to commencing work. Personnel will confirm that dialing 911 on the mobile telephone will reach local emergency medical services prior to on-site operations. Pre-arranged times and meeting locations will be made in the event phone/radio communication is not possible.

### **8.3 The Buddy System**

The buddy system will be used at all times.

## **9.0 DECONTAMINATION**

All disposable personal protective gear will be bagged and removed from the site for proper disposal.

## **10.0 CONFINED SPACE**

Confined space entry is not a requirement of this project.

## **11.0 SPILL CONTAINMENT**

There is minimal potential for any spill of hazardous chemicals at this site due to the nature of the work. However, should a spill occur, personnel should immediately contain the spill with available absorbent material, neutralize the spilled material if appropriate, and subsequently dispose of the spilled material appropriately.

## **12.0 HAZARD COMMUNICATION**

Only small amounts of hazardous chemicals (nitric, sulfuric, and phosphoric acids) will be used during field activities for sample preservation. MSDS documentation for these chemicals is stored at the Region 8 Laboratory and the hazards and precautions will be communicated to sample team members during the daily tailgate safety meeting. When using any acids for sample preservation, nitrile gloves and safety glasses will be worn, as will an outer laboratory coat or other protective covering.

## **13.0 STANDARD ON-SITE SAFETY PRACTICES**

All participants will conduct their work in accordance with the Chalk Creek Mining District Site Safety Plan and applicable rules. Personnel will be directed to leave the site if they fail to observe the safety requirements or in any way create a safety hazard. Standard personnel precautions include the following:

- Eating, drinking, chewing gum or tobacco, smoking or any practice that increases the probability of hand-to-mouth transfer and ingestion of material is prohibited in any contaminated area.
- Care must be taken when wearing personal protective equipment because of the increased potential for fatigue and/or heat stress related injuries due to dehydration etc.
- Contact with contaminated or suspected contaminated surfaces should be avoided. Whenever possible do not walk through puddles, mud and discolored surfaces; kneel on the ground; lean, sit



or place equipment on drums, containers, vehicles, or on the ground.

- Medicine and alcohol can potentiate the effects of exposure to toxic chemicals. Prescribed drugs should not be taken by personnel working on site where the potential of absorption, inhalation or ingestion of toxic substances exists unless specifically approved by a qualified physician. Alcoholic beverage intake should be minimized or avoided over the duration of the project.
- On-site personnel will be required to remove contaminated clothing and thoroughly wash hands and face prior to smoking, handling of any food or drink, using of any restroom facilities or leaving the site.
- Whenever decontamination procedures for outer garments are in effect, the entire body should be thoroughly washed as soon as possible after protective garments have been removed.
- Slips, trips, and falls will be a constant hazard with the potentially loose dirt and cobble located throughout the watershed.